

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Please amend claims 1, and 8-10 as follows:

Listing of Claims

1. (Currently Amended) A recording control apparatus for controlling recording of first, second, and third data series onto an optical disk, the apparatus comprising:

first data extracting means for extracting video and audio data having a first data amount for each frame from the first data series, the first data amount being a data amount in accordance with a data amount required for reproduction of one frame of an image for a first reproduction time;

second data extracting means for extracting frame metadata having a second data amount for each frame from the second data series, the second data amount being a data amount in accordance with a data amount required for reproduction of the frame metadata for a second reproduction time that is different from the first reproduction time;

first recording-control means for performing recording-control to record data having the first data amount for the first data series and data having the second data amount for the second data series onto the optical disk so that frame metadata for each frame is recorded physically adjacent the video and audio data recorded for each frame and the respective data, wherein the video and audio data and frame metadata which have a same reproduction time are periodically arranged at close positions in a circumferential direction of the optical disk in a form of annular rings respectively; and

second recording-control means for performing recording-control to record the third data series onto the optical disk only after all first and second data series are finished being recorded on the optical disk in the form of annular rings by the first recording control means so that the third data series is physically arranged on the optical disk independently of the periodically arranged first data series and the second data series, wherein the third data series is separately recorded at an inner circumference side in a contiguous manner and wherein the third data series is clip metadata recorded for each clip.

2. (Previously Presented) The recording control apparatus according to claim 1, wherein the first data amount is a data amount that is an integral multiple of a data amount in a physical unit area of the optical disk and that is close to a data amount required for reproduction for the first reproduction time, and

the second data amount is a data amount that is an integral multiple of a data amount in the physical unit area of the optical disk and that is close to a data amount required for reproduction for the second reproduction time.

3. (Previously Presented) The recording control apparatus according to claim 2, wherein, with respect to the optical disk, the physical unit area is a minimum area to/from which data writing/reading is performed or an area in which an ECC (error correcting code) block on which ECC processing is performed is recorded.

4. (Previously Presented) The recording control apparatus according to claim 1, wherein the first recording-control means causes the data having the first data amount for the

first data series and the data having the second data amount for the second data series to be recorded onto the optical disk so that boundaries of the respective data match boundaries of physical unit areas of the optical disk.

5. (Previously Presented) The recording control apparatus according to claim 4, wherein, with respect to the optical disk, the physical unit area is a minimum area to/from which data writing/reading is performed or an area in which an ECC (error correcting code) block on which ECC processing is performed is recorded.

6. (Previously Presented) The recording control apparatus according to claim 1, wherein the first data series is a data series of video or a data series of audio associated with the video;

the second data series is a data series of the frame metadata that requires a real-time characteristic for the data series of video or the data series of audio associated with the video; and

the third data series is a data series of the clip metadata that does not require a real-time characteristic for the data series of video or the data series of audio associated with the video.

7. (Previously Presented) The recording control apparatus according to claim 1, wherein, for each clip that constitutes material data in a predetermined area in the first data series, the third data series uses one file containing one of at least an LTC/UMID, GPS data, front-end time code, discontinuous-point time code information, a front-end extended UMID source pack, and a discontinuous-point extended UMID source pack.

8. (Currently Amended) A recording control method for a recording control apparatus for controlling recording of first, second, and third data series onto an optical disk, the method comprising the steps of:

a first data extracting step of extracting video and audio data having a first data amount for each frame from the first data series, the first data amount being a data amount in accordance with a data amount required for reproduction of one frame of an image for a first reproduction time;

a second data extracting step of extracting frame metadata having a second data amount for each frame from the second data series, the second data amount being a data amount in accordance with a data amount required for reproduction of the frame metadata for a second reproduction time that is different from the first reproduction time;

a first recording-control step of performing recording-control to record all data having the first data amount for the first data series and data having the second data amount for the second data series onto the optical disk so that the frame metadata for each frame is recorded physically adjacent the video and audio data recorded for each frame, wherein the video and audio data and frame metadata which have a same reproduction time ~~and the respective data~~ are periodically arranged at close positions in a circumferential direction of the optical disk in a form of annular rings respectively; and

a second recording-control step of performing recording-control to record the third data series onto the optical disk only after all first and second data series are finished being recorded on the optical disk in the form of annular rings so that the third data series is physically arranged on the optical disk independently of the periodically arranged first data series and the second

data series, wherein the third data series is separately recorded in a contiguous manner and wherein the third data series is clip metadata recorded for each clip.

9. (Currently Amended) A computer program, encoded on a computer-readable non-transitory storage medium, for causing a computer to perform recording-control processing for controlling recording of first, second, and third data series onto an optical disk, the computer program comprising the steps of:

a first data extracting step of extracting video and audio data having a first data amount for each frame from the first data series, the first data amount being a data amount in accordance with a data amount required for reproduction of one frame of an image for a first reproduction time;

a second data extracting step of extracting frame metadata having a second data amount for each frame from the second data series, the second amount being a data amount in accordance with a data amount required for reproduction of the frame metadata for a second reproduction time that is different from the first reproduction time;

a first recording-control step of performing recording-control to record data having the first data amount for the first data series and data having the second data amount for the second data series onto the optical disk so that the frame metadata for each frame is recorded physically adjacent the video and audio data recorded for each frame, wherein the video and audio data and frame metadata which have a same reproduction time ~~and the respective data~~ are periodically arranged at close positions in a circumferential direction of the optical disk in a form of annular rings respectively; and

a second recording-control step of performing recording-control to record the third data series onto the optical disk only after all first and second data series are finished being recorded on the optical disk in the form of annular rings so that the third data series is physically arranged on the optical disk independently of the periodically arranged first data series and the second data series, wherein the third data series is separately recorded in a contiguous manner and wherein the third data series is clip metadata recorded for each clip.

10. (Currently Amended) A computer readable non-transitory storage medium encoded with a computer program for recording first, second, and third data series onto an optical disk, said computer program comprising the steps of:

(a) recording video and audio data which is extracted from the first data series and which has a first data amount for each frame that is a data amount in accordance with a data amount required for reproduction of one frame of an image for a first reproduction time; and

(b) recording frame metadata which is extracted from the second data series and which has a second data amount for each frame that is a data amount in accordance with a data amount required for reproduction of the frame metadata for a second reproduction time that is different from the first reproduction time,

wherein the frame metadata for each frame is recorded physically adjacent the video and audio data recorded for each frame and the video and audio data and frame metadata which have a same reproduction time ~~data are recorded so that the respective data~~ are periodically arranged at close positions in a circumferential direction of the optical disk in a form of annular rings respectively, and

only after all first and second data series are finished being recorded on the optical disk in the form of annular rings, physically arranging the third data series at random on the optical disk independently of the periodically arranged first data series and the second data series, wherein the third data series is separately recorded in a contiguous manner and wherein the third data series is clip metadata recorded for each clip.